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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/627,105 | 07/24/2003 | Anthony A. Ruffa | 79865 | 2244 |
| 23523 | 7590 | 07/12/2007 | EXAMINER | |
| NAVAL UNDERSEA WARFARE CENTER DIVISION NEWPORT 1176 HOWELL STREET CODE 000C NEWPORT, RI 02841 | | | TRAN, HOANG Q | |
| ART UNIT | | PAPER NUMBER | | |
| 2874 | | | | |
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| 07/12/2007 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|------------------------|-------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/627,105 | RUFFA, ANTHONY A. |
| | Examiner Hoang Tran | Art Unit 2874 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-14 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>07/24/2003</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by the US Patent to Holmberg (5,212,755).

In terms of Claim 1 and 3, Holmberg teaches an optical fiber cable comprising: an inner layer of strength members (28); an outer layer of strength members (28) wherein element 28 comes in multiple layers [abstract]) and at least one tube containing at least one optical fiber incorporated into said other layer (Col [1-20]) wherein each of said strength members in said outer layer have an outer diameter and said at lease one tube has an outer diameter equal to said outer diameter of said strength members (Col 1[1-20]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmberg in view of Marlier (5,125,062).

Regarding Claims 2 and 4, Holmberg teaches the fiber cable of Claim 1, Holmberg does not teach a fiber cable wherein said at least one tube is formed from stainless steel and has an internal gel and said optical fiber is surrounded by said gel. Marlier teaches a fiber cable wherein said at least one tube is formed from stainless steel and has an internal gel and said optical fiber is surrounded by said gel (Col 2 [35-55]) wherein at least one tube has an outer diameter small than said outer diameter of said strength member diameter with a polymer layer (Col 3 [30-40]). A motivation to apply the polymer layer and a gel within a steel tube would be to increase the mechanical properties of the fiber cable to ensure the protection of the fiber from mechanical stress and strain. Therefore it would have been obvious at the time of the invention to apply the teachings of Marlier to the fiber cable of Holmberg in order to increase the mechanical properties of the fiber cable.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holmberg in view of Ruffa (5,734,623).

Regarding Claim 5, Holmberg teaches the cable of Claim 1, Holmberg does not teach a fiber cable wherein a Bragg grating is embedded in a fiber to be use a sensor. Ruffa does teaches a fiber bragg grating embedded in a fiber cable to detect strain in a sensor system. A motivation to embedded a Bragg grating in a fiber would be to use the fiber as a sensor device. Therefore it would have been obvious at the time of the

invention to apply the teaching of Ruffa to the fiber cable of Holmberg in order to make a sensor device using bragg gratings.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmberg in view of Stottlemeyer (6,591,046).

Regarding Claim 6-8, Holmberg teaches the cable of Claim 1, Holmberg does not teach a fiber cable wherein a plurality of tubes containing optical fibers incorporated into said outer layer and further comprising a first jacket surrounding said inner layer and second jacket surrounding said outer layer. Stottlemeyer does teach a plurality tubes and a first and a second jacket (Figure 1, [26,34,14,]). A motivation for such an implementation would be to increase the amount of fiber a tube may hold at the same time to protect and reduce the strain on the any one particular fiber zone. Therefore it would have been obvious at the time of the invention to apply the teachings of Stottlemeyer to the fiber cable of Holmberg in order to hold multiple fibers at the same ensure the fiber are not being put under too much strain.

Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable by the US Patent to Ruffa in view of Holmberg (5,212,755).

In terms of Claim 9-14, Ruffa teaches a sensor fiber system (Figure 1) wherein the sensor comprises of an acoustic pulse (abstract), and optical pulse (abstract), a timer [34], and processor [34], a pulse generator transducer (Claim 2), wherein the transducer array is a steer able array fro accurately directing the acoustic pulse along the length of the optical fiber (Claim 2), wherein the optical pulse generator is a pulsed laser (Claim 4), further comprising a platform for suspending the topical fiber and for

housing the acoustic pulse generator, wherein a weight body is attach to the optical fiber (Claim 6 and Figure 1). Ruffa does not teach the fiber cable of Claim 1 of which limitations are present in Claim 9. Holmberg teaches an optical fiber cable comprising: an inner layer of strength members (28); an outer layer of strength members (28 wherein element 28 comes in multiple layers) and at least one tube containing at least one optical fiber incorporated into said other layer (Col [1-20]) wherein each of said strength members in said outer layer have an outer diameter and said at lease one tube has an outer diameter equal to said outer diameter of said strength members (Col 11-20). A motivation such an application would be to create a sensor system for underwater use wherein the armor cable of Holmberg would maintain the strain and pressure of the water in high-pressure environment. Therefore it would have been obvious at the time of the invention to apply the teaching of Holmberg to the device of Ruffa in order to create an underwater sensor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang Tran whose telephone number is 571-272-5049. The examiner can normally be reached on 9:00AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ht

Hoang Tran
AU 2874
June 25, 2007

/Sung Pak/
Sung Pak
Primary Patent Examiner
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